

Listing of Claims

There are no changes to the claims.

Drawing Amendments

There are no changes to the drawings

Remarks

In response to the official action dated March 26, 2003, applicant expresses appreciation for the extended interview conducted with Examiner Lee on June 17, 2003. The purpose of the interview was to discuss the rejection of claims under 35 USC 103, based on the Tanaka patent in view of Sawyer. Applicant understands that the examiner now concurs that the Sawyer patent should be withdrawn based on remarks provided. Those remarks have been set forth in this response.

The examiner has objected to the drawings submitted on Feb 28, 2003. The specification has been amended to more clearly explain the contents of the drawings and to correct typographical errors. No new matter has been added to the application. Applicant has reviewed the drawings and finds everything in order. All figures submitted in the new formal drawings correspond to the rough drawings as originally filed. To assist the examiner in a comparison, new copies of both sets of drawings have been attached, with highlighted references numerals applied to the original drawings. The examiner is asked to contact the undersigned if further discussion is needed.

With respect to the preliminary amended directed to claim 4, the examiner is correct that this amendment pertained to claim 5. Applicant appreciates the examiner's attention to this typographical error.

In paragraph 5 of the office action, the examiner raises the issue of common ownership of the claim in this application. Applicant confirms that all claims have been and continue to be under common ownership of American Technology Corp.

The examiner rejected claims 1-6, 12-15 and 20-25 as being unpatentable over Tanaka in view of Sawyer. The examiner acknowledged that Tanaka fails to teach the use of a film diaphragm coupled directly to the air as part of a one-stage conversion process for generating parametric sound. In the subject office action, the examiner asserted that Sawyer's disclosure of a film diaphragm in a headphone, combined with the Tanaka general disclosure of a parametric device, constituted a combination of references that made the invention obvious to one skilled in the art under 35 USC 103.

In the referenced interview, Applicant discussed the following points relating to the proposition that one skilled in the art would not turn to Sawyer or any other reference that merely teaches the use of a film emitter in normal audio systems that operate in a conventional linear mode to support a rejection of the claimed invention. Specifically,

1. Parametric speakers require high-energy output to create the power required to drive the air medium to a nonlinear state to develop a nonlinear response of air to decouple a parametric signal from ultrasonic frequencies to reproduce the desired audio frequencies.
2. Film emitters associated with sound in the prior art have been limited to linear systems that produce sound directly, in a conventional manner, and have not been applied as part of a parametric speaker.
3. Prior art parametric speakers have relied on dynamic-type, multi-stage emitters with second stage matching devices, such as bimorph transducers, that generate very high energy in a localized space.
4. Prior art film emitters in general sound applications (linear systems) have been recognized as low power devices.
5. Tanaka teaches specifically that "Because of a low conversion efficiency, an extremely powerful ultrasonic wave is required to reproduce an audible sound of

practically acceptable level” in a parametric speaker. Col 1, lines 42 – 45.

Therefore, Tanaka would require a very high power transducer as part of a parametric speaker.

6. Accordingly, both Tanaka and the general prior art of linear audio systems teach against the consideration of a film transducer for parametric use.
7. Finally, one skilled in the art would not consider that a sound system based on conventional linear mode operation would provide obvious teachings for implementation in a nonlinear sound system, particularly such as parametric sound. It would be recognized that sound production and control of distortion and related technical issues would be significantly different for a nonlinear system as compared to a linear system.
8. Accordingly, the lack of suggestion that film could be effectively used as a parametric emitter and the differences between conventional sound systems operating in a linear mode, versus parametric sound systems that only operate where the air is driven to a nonlinear mode, would not suggest the present invention as claimed to one of ordinary skill in the art.

Reconsideration of the rejection under 35 USC 103 is respectfully requested.

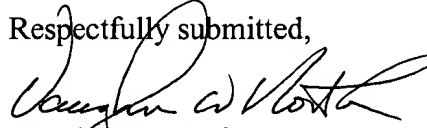
In paragraphs 7 and 8, the examiner has asserted a double patenting rejection against claims 8, 10, and 14-19. Applicant has attached a terminal disclaimer to overcome this rejection.

Applicant expresses appreciation for the identification of allowable subject matter in claims 7, 9 and 11. In view of the remarks set forth above, applicant respectfully requests reconsideration of all rejections and urges allowance of all claims at the earliest possible date.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Amendment to Deposit Account No. 20-0100.

DATED this 26 day of June, 2003.

Respectfully submitted,



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